

alone they soon become again knotted together in a compact rounded mass as at present, with the heads divergent, and writhing so as to remind one of the head of the fabled Medusa.

Prof. Leidy then directed attention to several other specimens which had been sent to him for information. One of these is a bunch of tapeworms, fifteen individuals of *Tenia diminuta*, from the intestine of a rat. The other is the liver of a rat with a multitude of cysts, the size of large peas, containing *Cysticercus fasciolaris*. In a letter accompanying the specimens, Dr. John R. Hewett states that last spring he had examined about 500 rats (*Mus decumanus*), in Carroll Co., Mo., and only in half a dozen instances did he find the liver free from the parasite.—*Proc. Acad. Nat. Sci. Philad.* Jan. 28, 1879.

*On some Plesiosaurians of the Upper Jurassic Strata of
Boulogne-sur-Mer.* By M. H. E. SAUVAGE.

Of the same age as the beds of Shotover and Kimmeridge, the Upper Jurassic deposits of Boulogne-sur-Mer have in part the same herpetological fauna. Thus, to cite only Plesiosaurians, the following were stranded upon the Jurassic shores of the Boulonnais:—*Pliosaurus gamma*, *P. grandis*, *Polyptychodon Archiaci*, *Plesiosaurus carinatus*, *infraplanus*, *plicatus*, and *ellipsospondylus*, belonging to the family Plesiosauridæ, and *Polycotylus suprajurensis*, *Marcenosaurus Manselii*, and *M. brachyspondylus*, to that of the Elasmosauridæ. These Reptiles were not the only Plesiosaurians frequenting those shores; with them lived *Colymbosaurus Dutertrei*, *Plesiosaurus morinicus*, *P. Phillipsi*, and *Pliosaurus suprajurensis*.

This last species, found in the upper part of the Portlandian, is distinguished from *P. brachydeirus* by the greater length of the cervical and dorsal vertebræ. In the cervicals the lower surface of the centrum, which is strongly rounded, bears a broad and salient crest, the articular surfaces are nearly smooth; the neurapophysis is wide, the zygapophysis slightly passes the level of the centrum. The length being 100, the width will be 154, and the height 130.

Under the name of *Plesiosaurus carinatus*, sp. n., Phillips has figured a small species from Buckinghamshire; this species not being the same as that described by Cuvier under the same name, we may call it *P. Phillipsi*. Among distinctive characters between the two species, the cervical vertebræ of *P. Phillipsi* are longer, the form of the articular surface of the pleurapophyses is different, and the relations between the surface for the attachment of the rib and the extremity of the suture which unites the neurapophysis to the centrum are quite different.

Although allied to *Plesiosaurus carinatus*, Cuv., *P. morinicus* is distinguished therefrom, as regards vertebræ occupying the same place in the cervical series, by the form of the articular surfaces and the greater breadth of the inferior surface of the centrum, and because

the surface of attachment for the rib, instead of occupying nearly all the breadth of the lateral surface of the centrum, is, on the contrary, of but small extent. The length being 100, the breadth is 159 and the height 112.

The genus *Colymbosaurus*, belonging to the family Elasmosauridæ, known only from the Cretaceous in England, is represented in the upper part of the Kimmeridgian at Boulogne by a species, *Colymbosaurus Dutertrei*, Sauv., the cervical vertebræ of which are remarkable by the form and size of the articular apophyses. The centrum is elongated; and its three diameters are nearly equal; the lower surface, scarcely excavated in the direction of its length, is divided by a narrow keel; the plenrapophyses, intimately soldered to the centrum, spring from it in the form of a flattened plate; the articular surfaces are flat and nearly circular in form; the præzygapophyses are in the form of rounded ribs; the postzygapophyses are in the form of plates; the neural spine is much compressed in the form of a thin plate; the medullary canal is very narrow and rounded.—*Ann. des Sci. Nat.* sér. 6, tome viii.

The Nebaliad Crustacea as Types of a new Order.

By Dr. A. S. PACKARD, Jun.

The Nebaliadæ, represented by the existing genus *Nebalia*, have generally been considered to form a family of Phyllopod Crustacea. Metchnikoff, who studied the embryology of *Nebalia*, considered it to be a "Phyllopodiform Decapod." Besides the resemblance to the Decapods, there is also a combination of Copepod and Phyllopod characteristics. The type is an instance of a synthetic one, and is of high antiquity, having been ushered in during the earliest Silurian period, when there were (if we regard the relative size of most Crustacea, and especially of living *Nebaliæ*) gigantic forms. Such was *Dithyrocaris*, which must have been over a foot long, the carapace being seven inches long. The modern *Nebalia* is small, about half an inch in length, with the body compressed, the carapace bivalved as in *Limnalia*, one of the genuine Phyllopods. There is a large rostrum overhanging the head; stalked eyes; and besides two pairs of antennæ and mouth-parts, eight pairs of leaf-like, short, respiratory feet, which are succeeded by swimming-feet. There is no metamorphosis, development being direct.

Of the fossil forms, *Hymenocaris* was regarded by Salter as "the more generalized type." The genera *Peltocaris* and *Discinocaris* characterize the Lower Silurian period, *Ceratiocaris* the Upper, *Dictyocaris* the Upper Silurian and the lowest Devonian strata, *Dithyrocaris* and *Argas* the Carboniferous period. Our existing north-eastern species is *Nebalia bipes* (Fabricius), which occurs from Maine to Greenland.

The Nebaliads were the forerunners of the Decapoda, and form, we believe, the type of a distinct order of Crustacea, for which the name Phyllocarida is proposed.—*American Naturalist*, Feb. 1879.